

Paving Calculation Software V2
The User Manual

SDART Ltd

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2 About the User Manual

The Paving Calculation Software or 'Pave-Calc' was developed to make a difference in the slab stones selling industry. The following manual, guides the software user through the software functions. The explanation of the software functions is developed gradually, starting from the introduction to the concept of the software use, followed by a more detailed description of each individual function.

2.1 What is the main purpose of the software?

The main purpose of the software is to create quick and precise quotations for customers. The software enables the calculation of the quantities of stones required for specific patterns using customer defined dimensions. The software calculates the exact numbers of the individual stones for the selected area, enabling precise quotations to be created. The software also creates a visual representation of the created design showing how to lay the slabs on the selected area. Going through the whole selection process, the software greatly improves the speed and quality of customer service. Each quotation can be processed in seconds starting from the general idea, through to the finished design preview ending with a final price including all necessary slabs and additional materials.

2.2 What is the difference compared to other programs?

The main differences compared to the existing software and program tools are the speed and quality of the work produced by the software. The same work could take hours if done manually or even with other existing on the market tools. By using 'Pave-Calc', working with the customers is easier, faster and more reliable. The software includes all the information necessary to create a design and to give a quote to the customer, which greatly improves the whole decision making process. The customers can be guided (see and compare) through the whole range of the available design options such as patterns and shades, get a summarised design preview and try different variants while comparing the exact quotations for the order. Thus customers 'changing their mind' is no longer a problem.

3 Software Installation

To install the software, insert the installation CD to your CD-drive. Installation should start automatically. If the application does not start automatically, explore the CD and select the installation program, then follow the on screen installation instructions. The installation allows you to select the location for the software and related files. After the installation the software will be selectable from the list of the programs in the Start Menu.

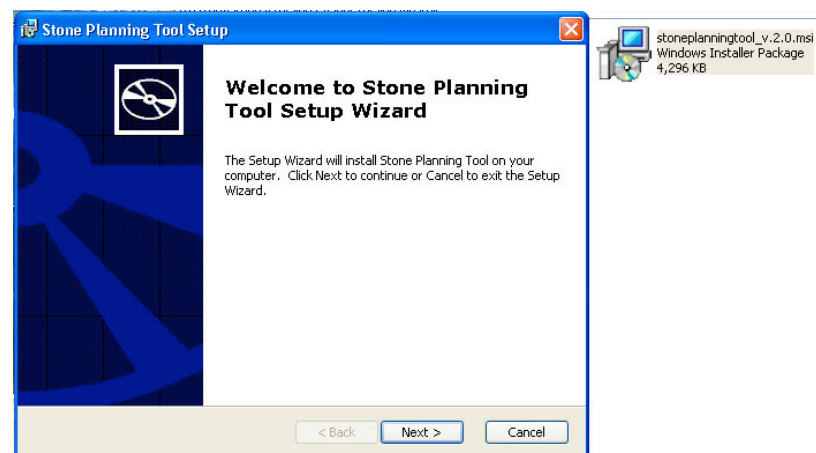


Figure 1 Software installation window.

To start the software, go to **Start**, then **Programs**, select the software from the list and choose **main programme**.

To uninstall the software, go to **Start**, then **Programs**, select the software from the list and choose the removal tool (as shown in the figure 2)

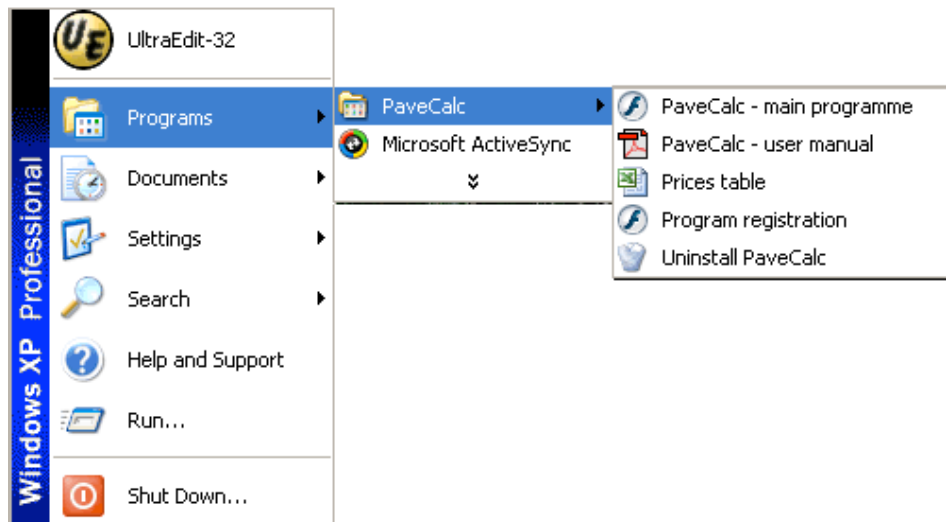


Figure 2 Software un-installation window.

4 Software Registration

Before you can use the software, it needs to be registered. This is done by starting the Registration module for the software and typing the supplied serial code, as shown below.

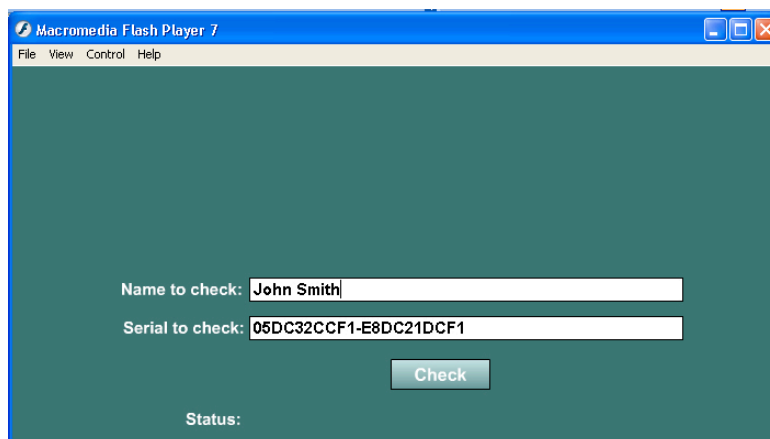


Figure 3 Software registration window.

NB Please make sure that the name or the registrant and supplied number are typed correctly, otherwise the registration will fail and the software will not work.

After registration, you are able to use the software for the period of time permitted by the licence. After the permitted period has expired you will need to acquire a new licence.

5 Screen Layout

The layout of the on-screen display was designed to visually separate the different functions and features, allowing each section to be easily recognised, as follows:

Pattern Selection: A list of the patterns available to create design.

Shade Selection: A list of the stone shades available to order.

Garden Dimensions: User defined dimensions for the garden.

Quick Preview: The area to display the Pattern design or shade image.

Necessary stones: Shows the quantities of each stone required for the design.

Materials: Other materials required for the garden finish.

***Contractors Packs:** This section appears only for the Mixed Crate pattern, and shows the quantity of the stones divided into Contractors Packs.

The sections are shown in the figure 4 below.

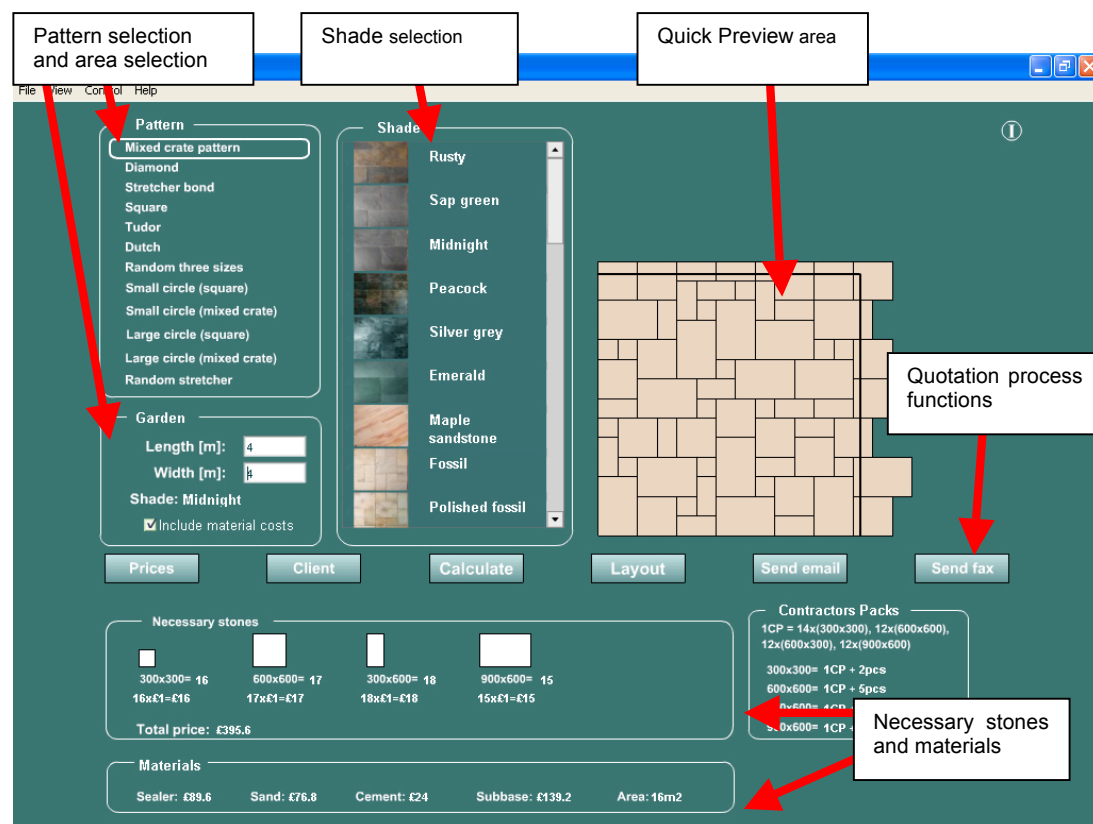


Figure 4 Main software window.

6 Main functions in the program

6.1 Pattern selection

The **Pattern** section is used to select a pattern for the quotation design. The patterns are selected by pointing and clicking on the name of the preferred pattern. After the selection, a preview of the default size layout will be displayed in the display area showing how the selected pattern would look. This is shown in figure 5 below.

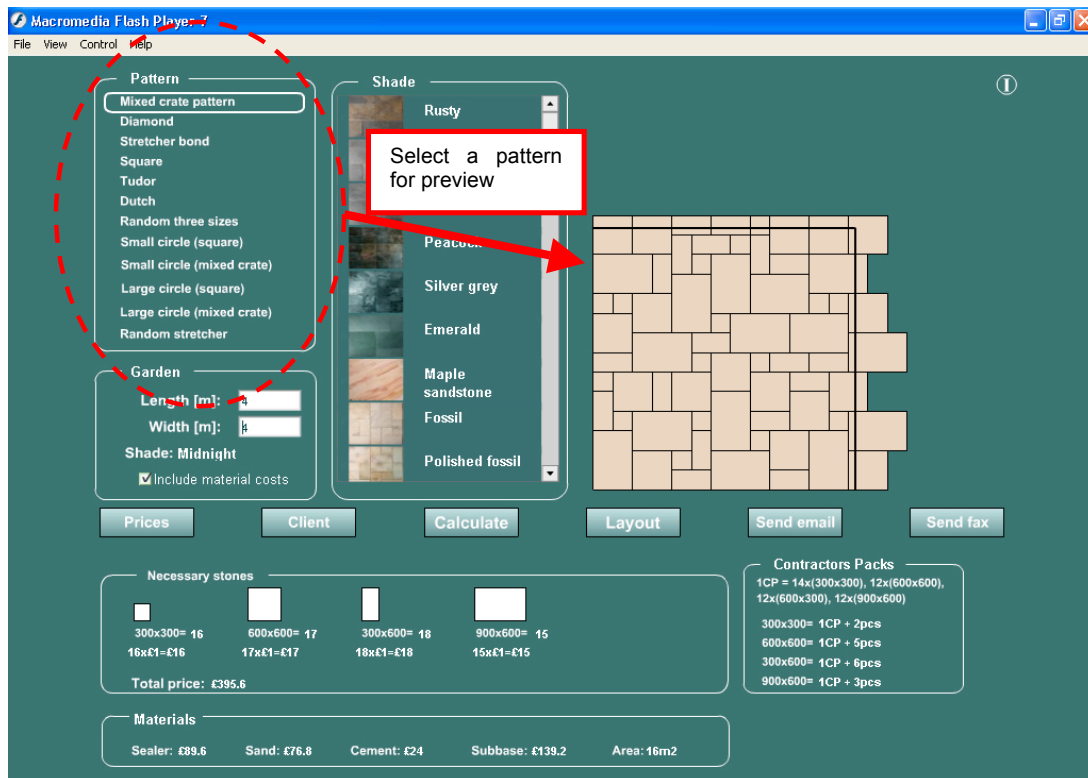


Figure 5 Pattern Selection window.

6.1.1 Sample preview

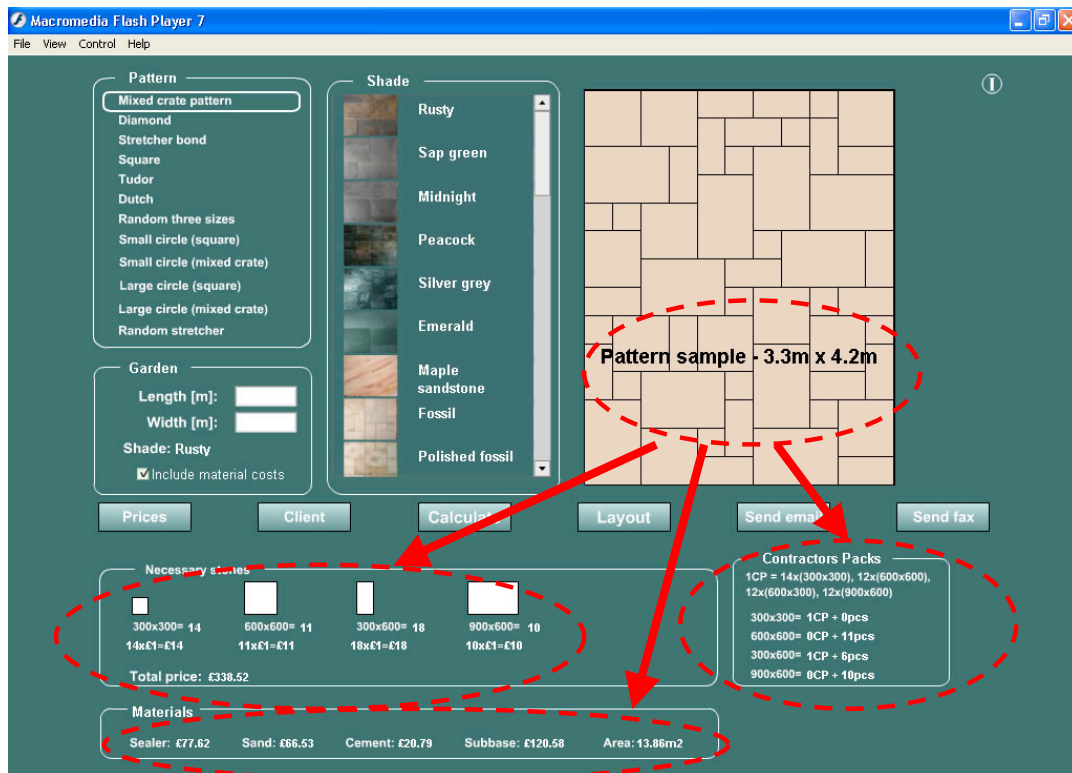


Figure 6 Preview Sample window.

If the dimensions are not selected the pattern preview will automatically show the pattern on a default size. It will display the measurements of the default size in the sample preview window. For these standard dimensions the amount of stones and materials will also be displayed in the appropriate sections. In the case of the Mixed Crate pattern, additional information about the contractors' packs is also displayed. This is shown in figure 6 above.

6.1.2 Dimension selection

The design dimensions are selectable in the section called 'Garden'.

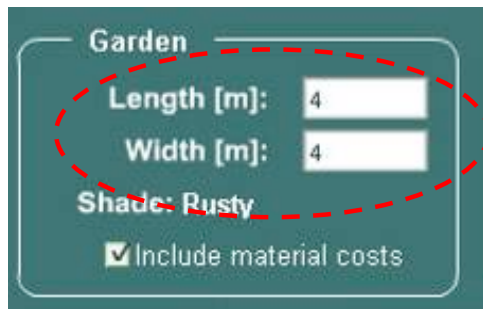


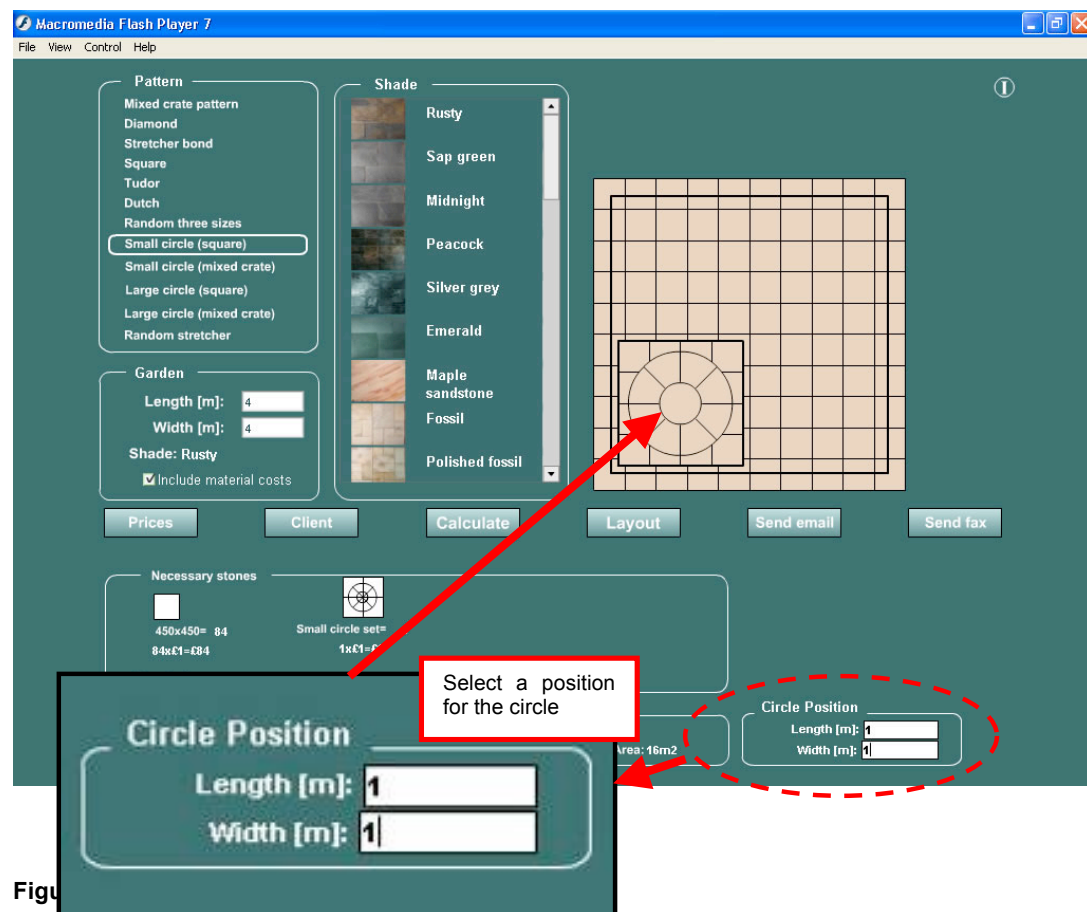
Figure 7 Garden Dimensions selection.

The Garden section is used to input the required dimensions for the area of the current quotation. The design starts from the bottom-left corner, which is at zero length and zero width. The dimensions are defined in metres and the calculator accepts partial values such as – Length: 1.5 and Width: 2.3.

Also in this section you will find the option to 'Include material costs'. Selecting this option will add the additional materials to the final quotation. This option can be un-ticked if not to be used in the quotation.

6.1.3 Positioning a circle

For patterns containing an additional circle pattern, the extra information about the position of the circle in the area can also be selected. After you select the pattern including a circle, a section called 'Circle Position' will appear in the bottom right hand corner of the screen. Use this function to position the centre of the circle. Notice that the bottom left hand corner is zero length and zero width, as it was with the garden dimensions.



Macromedia Flash Player 7

File View Control Help

Pattern

- Mixed crate pattern
- Diamond
- Stretcher bond
- Square
- Tudor
- Dutch
- Random three sizes
- Small circle (square)
- Small circle (mixed crate)
- Large circle (square)
- Large circle (mixed crate)
- Random stretcher

Garden

Length [m]: 4

Width [m]: 4

Shade: Rusty

☒ Include material costs

Shade

- Rusty
- Sap green
- Midnight
- Peacock
- Silver grey
- Emerald
- Maple sandstone
- Fossil
- Polished fossil

Prices Client Calculate Layout Send email Send fax

Necessary stones

450x450= 84

84x1=£84

Small circle set= 1x£1=£1

Circle Position

Length [m]: 1

Width [m]: 1

Area: 16m2

Select a position for the circle

Figure 8

6.2 Shade selection

The **Shade** section is used to select the shades of the stone for the design. This is done by 'hovering' the mouse pointer over the name of the preferred shade. While the mouse is over the icon an image preview showing the shade will be displayed in the display area. To select the preferable shade into the quotation, simply click in the icon representing the requested shade. The selected shade name will appear in the '**Garden**' section of the program.

Note that there is a scroll toolbar on the right hand side of the Shade section. You will need to scroll this up and down to be able to see all the shades available on the list.

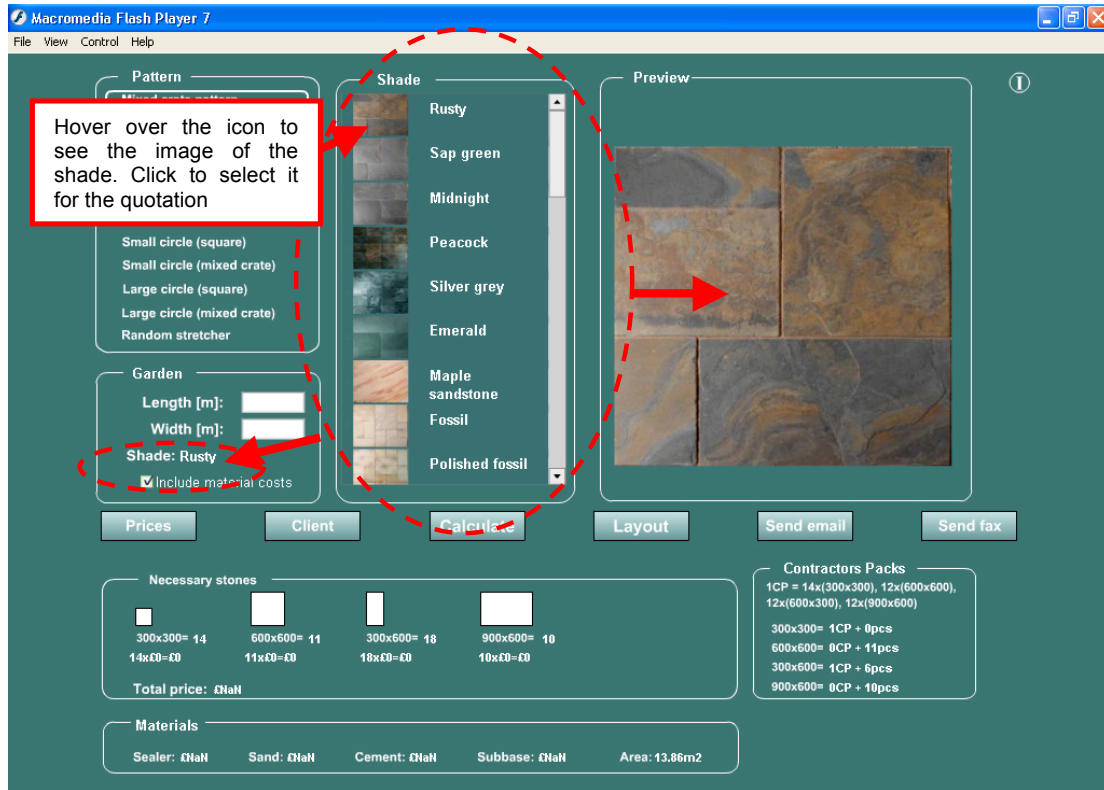


Figure 9 Shade selection window.

6.3 Price list

Quotes created by this software are based on the list of prices included in the program. If the price for an individual item needs to be changed, this can be done by selecting the item from the drop down list and amending the value shown in the 'Price' text box. **Warning: changes made manually in this way will only change the program list and you will not be able to export the data to an external (csv) file.**

The best way to update the prices is to update them in the Excel csv file 'prices.csv', which can be accessed by going to 'Start', 'Programs' and in the **Paving Calculation tool** folder selecting the Excel file '**prices.csv**' (this is explained with screen shots in the advanced functions section 6.1.1). Once opened, update the new prices and save the changes made. Then go back into the 'Paving Calculation tool' software and click on the '**Import prices from Excel**' button within the '**Price**' function.

The material prices can be altered in the same way by selecting the left text box in the materials area and amending the value. The amounts of material per m² can also be altered by selecting the right text box in the materials area and amending the value, as shown in figure 10 below. **Warning: as with the price alterations above, changes made this way will only update the program and not be exportable, again the best way to update these values is through the 'prices.csv' file as explained above.**

Macromedia Flash Player 7

File View Control Help

Dropdown list of items

Large circle set - antique

Import prices from Excel

Material prices

Details

Stone:
lcircle

Description:
Large circle set

Pattern:
antique

Price:
1

Update

Set the price here

Materials

	Prices (£ per kg)	Amounts (kg per m2)
Cement:	1	1.5
Sand:	2	2.4
Subbase:	3	2.9
Sealer:	4	1.4

Figure 10 Price list window.

6.4 Client selection database

This window gives you access to the client database, this database will be built up over time holding information about each client. The client can be selected or added at any time during the quote, which will automatically link the client's data to the quote. Existing clients can be selected from the drop down list on the top left of the window.

To create a new client, click on the 'Add New' button, which will blank out any existing text in the fields and then type in the new clients details. Client details can also be updated by selecting the client from the drop down list, then select the relevant text box. Amend the value with the new information and click on the 'Update' button, which will save the changes made. There is the facility to delete clients from the database by selecting them from the drop down list and clicking on the 'Delete' button. It is important to keep client information up to date as it is automatically used by the software to create the quotation. See figure 11.

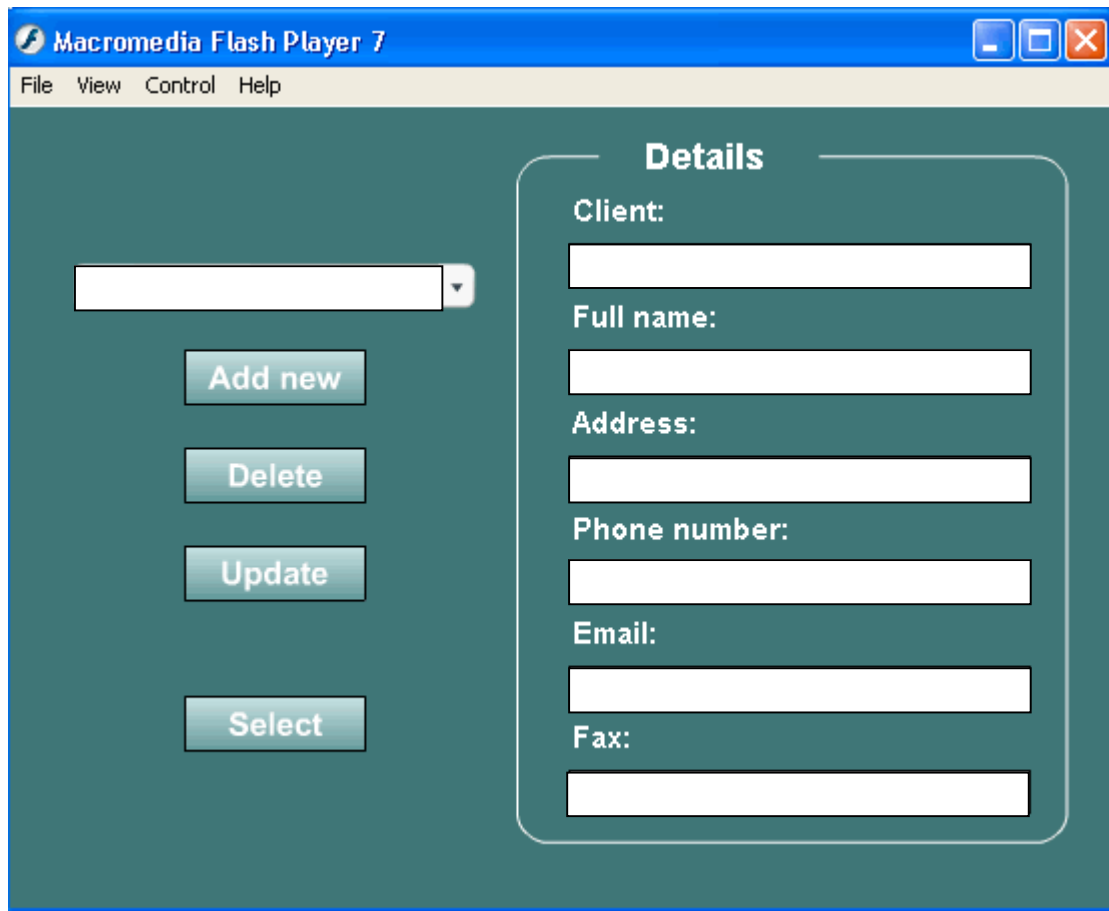


Figure 11 Client selection window.

Useful hint! Use a coma to separate each line of the address.

6.5 Calculate function

The calculate button is located under the Preview section, the third in the row of function buttons. Clicking on the '**Calculate**' button activates the following functions (as shown in figure 10 below):

Generation of a new preview for the selected pattern dimensions.

Display of the amount of stones required for that pattern dimension and the cost.

Display of the amount of other materials required for that pattern and the cost.

If a circle pattern is chosen and the position of the circle has been changed, the circle will be displayed in the new position.

In the case of the 'Mixed crate' pattern this will display the number of contractor packs required.

All these functions are activated simultaneously with one click of the button (as shown below in figure 12).

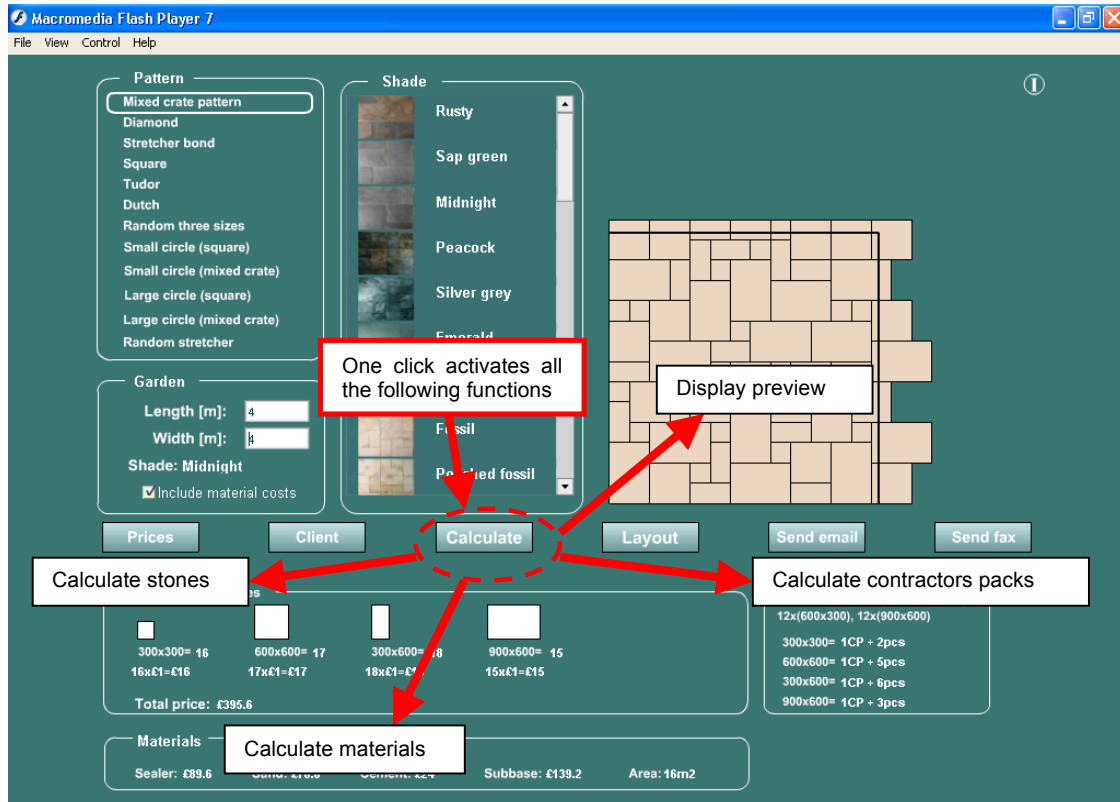


Figure 12 Calculate button window.

6.6 Layout preview

The layout button is located under the preview area, the fourth in the row of function buttons. The 'Layout' function is used to provide a detailed map of where the stones are located on the created design (see figure 13 below). This function opens a new window and generates a colourful display of the stones for the selected area, which will be used as a guide by the people responsible for laying the stones. Each type of slab has an individual colour. In the top of the screen a guide is displayed showing the area dimensions used in the layout, the types of stone and the quantities that will be needed to create the design.

Additionally the layout contains a 'cutting line' showing the precise dimensions of the selected area, which is displayed as a line on the top of the stones. This line can be used to estimate how many off-cuts will be produced and gives a guide to the adjustments required for the cut stones before they will be placed.

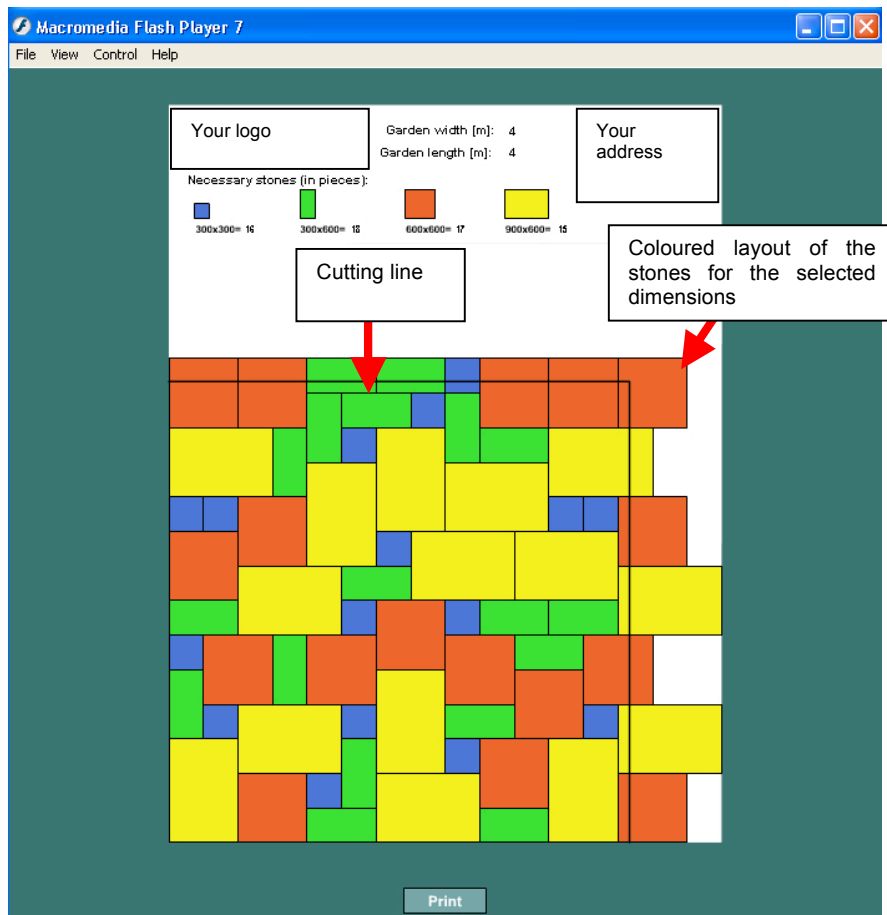


Figure 13 Layout preview window.

Note you can use this layout as an attachment to the quotation created for the customer. How to add this to an email or virtual fax will be explained later in this manual in the advanced functions.

6.7 Send email/fax

The fifth and sixth function buttons in the row located under the Preview section are the 'Send Email' and 'Send Fax' buttons. These functions are used to generate a quotation letter for the customer. Clicking the '**Send Email**' function will start your default email program (see figure 14 below). The text will be generated automatically from the information used to create a design. Information about the 'Client': such as the client's address, name, email / fax will be inserted automatically. This is followed by a detailed description of the order: dimensions, type of pattern, type of stones, quantity of stones and materials all priced and displayed with a total combined price. The letter has a standard ending and comments regarding the quotation, you can modify them according to your needs.

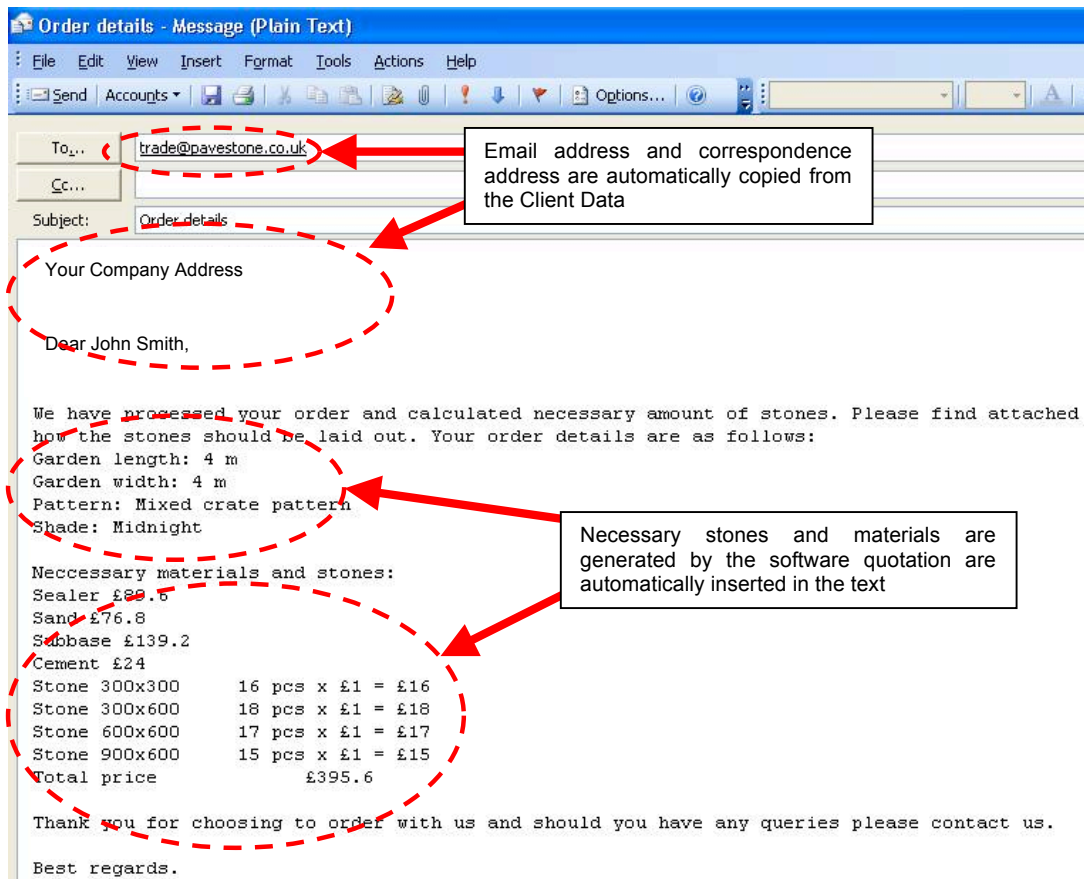


Figure 14 Send email window.

If the 'Send Fax' button is clicked, the details will appear as above but the Client's fax will be used instead of an email address (see figure 15 below). This is for the electronic fax system. How to set up an electronic fax provider will be explained later in this manual in the advanced functions section.

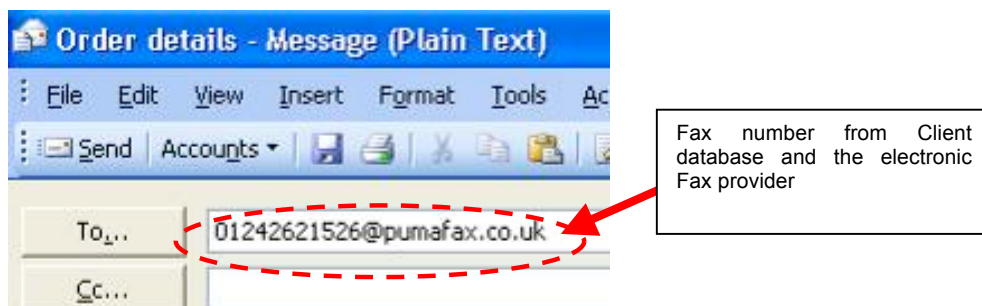


Figure 15 Send fax window.

6.8 Working with the program

All functions in the program have specific relationships to each other. Even though they can be used separately, they will not perform correctly if not used in conjunction with each other. The workflow of the program has been designed as a progression of logical steps that would be naturally performed in creating a quote for a customer. However, the program is flexible to individual styles, allowing you to adjust the way you use the software and allowing you to interact differently with individual clients. The following recommendation is a general suggestion only and it follows a basic, logical approach to the quotation process.

6.8.1 Price list

The price list is a fundamental part of the system that will require user input. The first time the program is started all prices will be set to £1. These will need to be reset to reflect the numbers used for quotations.

There are two ways to insert prices - the first is to set each individual item on the list, (Not the preferred option, so only use if you have to) the second is to import it from Excel or Sage to the software database. Get familiar with both methods, so you know how you can

change the prices if required. It will depend on the company policy as to how often the prices are changed. It is good practice to check that you are using the latest price list before starting to give quotes to customers. You will only need to check it once at the beginning of each working day.

6.8.2 Pattern selection

There are 12 main patterns available. Typically you will start creating a quote from this option. You can present the available patterns to the customer and let them see the differences. Once you know which pattern the customer is interested in you should type in the dimensions of the area and click on the **'Calculate'** button.

After the pattern has been calculated, if the customer is not convinced about the pattern, you can change the quote by selecting other patterns. Each time you change the pattern a new preview will be generated for the selected area.

Note that for any size of area, the pattern will be repeated using an intelligent replication function avoiding straight lines, which would typically appear when small areas of a pattern are replicated next to each other.

6.8.3 Dimension selection

After dimensions have been inserted, press the **'Calculate'** button to recalculate the area. Every time you change the dimensions you will need to use 'Calculate' button to refresh the displayed area.

Dimensions can accept fractions or partial values, such as 0.5m or 4.6m, but all dimensions will need to be in metres. The program has a limit on the size of the area, this will be better described in section 7 covering the 'Limitations of the program'.

6.8.4 Shade selection

Once you have agreed on the Pattern used for the design, and selected your area, you should select the **'Shade'** of the stones for the design. The quick display of the available shades will help you find the best option. **NB: To be able to see all the shades you will have to scroll through the list of the stones colours.** Another important thing to note is that after a shade has been selected, it might be possible that the option is not available in all the sizes required for the selected pattern. This will be displayed as a text warning on the **'quick preview panel'**.

6.8.5 Client selection

When your design is ready to process into a formal quotation, you will need to acquire information about the client. This can also be done at the beginning of the quotation process. If a client exists on the database, simply find and select the client's name from the drop down list, then click the **'Select'** button and close the window.

If they are a new client you will have to create a new empty client record. This is achieved by clicking on the **'Add New'** button, which will generate an empty record. You then type in the client's details (using a comma between each line of the address) and click on the **'Update'** button. Then click the **'Select'** button and close the window.

6.8.6 Calculate function

The **'Calculate'** button should be considered as a 'refresh screen' function. It should be used every time any of the parameters have been changed and you would like to see the results of the amended quote.

6.8.7 Layout preview

Generate a **'Layout preview'** as a clear and colourful guide on how to lay the stones. It is an essential part of the quotation as it illustrates for the customer how the stones will look but also how they should be laid, given the quantities of materials ordered. You can just print the page and hand it to the customer with the rest of the quotation or you can add it to the email as an attachment. How to add it as an attachment is described in the advanced functions section.

6.8.8 Send email/fax

Once your quotation is ready and you are happy with the results and numbers, you are able to generate a formal letter summarising the order. You can use your email program to generate an email or send an electronic fax to the customer. Simply click on the **'Send Email'** or **'Send Fax'** button and let it open your default email program. On most computers this will be Outlook (unless you have it set up differently). Once the email program is open the email is ready to be sent to the customer.

7 Advanced functions explained

This section explains how to perform the advanced functions. It has been left until the end as it requires some basic computer knowledge. The software can be used without knowing the details of these advanced functions but they are designed to help and becoming familiar with them will enable you to become more efficient in your work.

7.1 Importing prices from external programs

A list of the prices can be created and imported into the software from external programs such as Excel or Sage, or any software that has the option of saving files in 'csv' format. These 'csv' files contain sets of 'Coma Separated Values' or 'comma delimited values' and has a 'csv' extension. (Peter Rabbit, 1 The Burrow, Rabbitshire, UK is one set of CSVs.)

7.1.1 Importing from Excel

To see and modify the list of prices within Excel go to 'Start', 'Programs' and in the **Paving Calculation tool** folder select the **Excel** file as shown in figure 16 below.

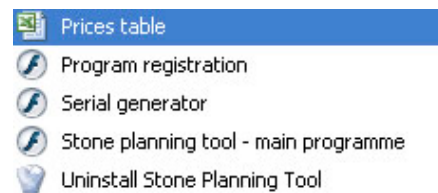


Figure 16 Excel prices.

This file contains the list of the prices and additional materials. You can change the values according to the latest figures. Once the amendments have been implemented, save the file in the same location with the extension 'csv', as shown in figure 17 below:

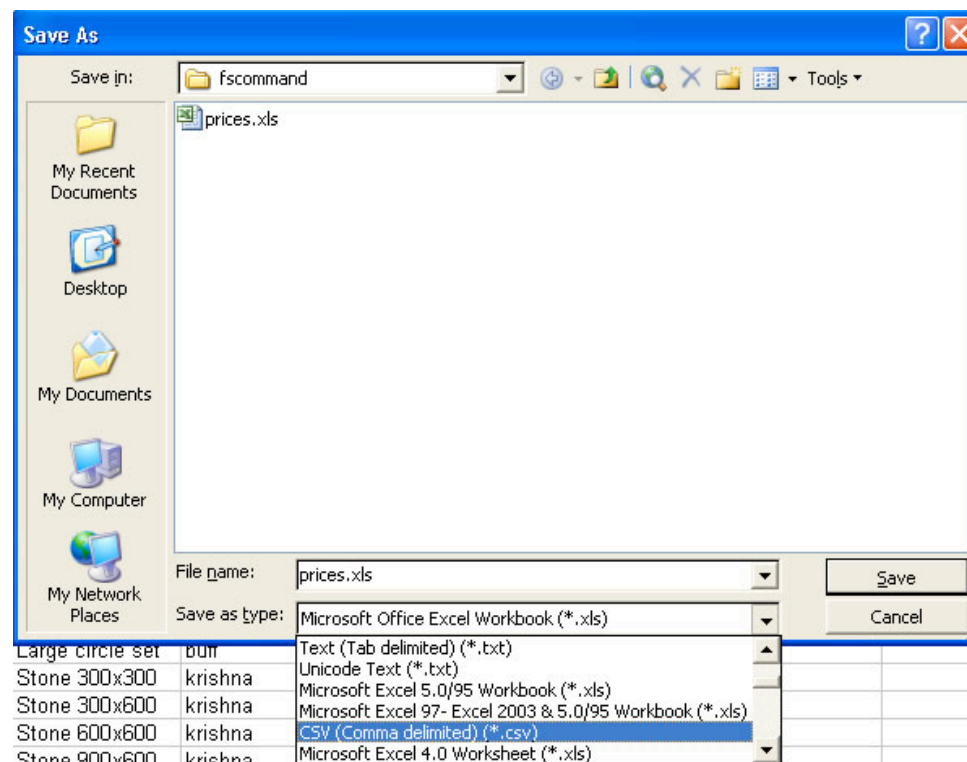


Figure 17 Saving file with 'csv' extension.

In the software open the function 'Prices'. Click the 'Import prices from Excel' button in the top right corner of the window, which will activate an external import to the software.

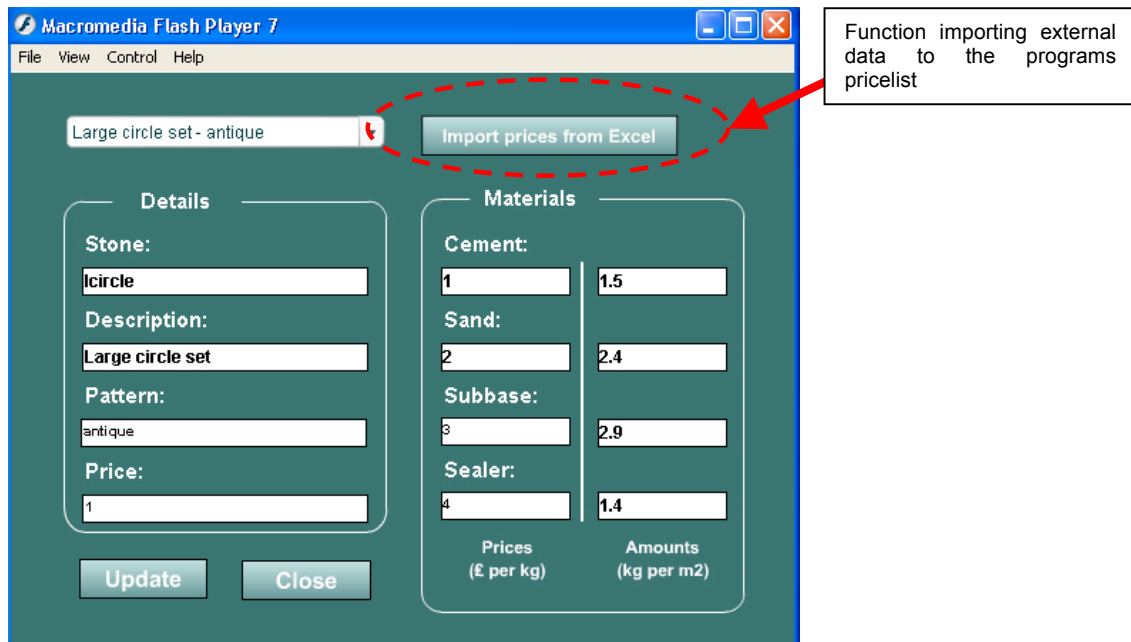


Figure 18 Import function window.

7.1.2 Exporting from Sage

Sage has an option of exporting values to Excel. You can use this if you would like to use the prices from your Sage database in the Paving Calculation Software. **This is achieved by using Sage's export to Excel function and then saving it as a 'csv' file, overwriting the 'prices.csv' file in the folder which the software was downloaded into.** After you have overwritten this file with the new data, go into the Paving Calculation tool software and select the '**Price**' function, then click on the '**Import prices from Excel**'. This will automatically update the software with the new prices.

7.2 Attaching a layout preview to email or fax

To attach a file containing the layout preview, you will need to print the page into a PDF format document. This enables the PDF document (containing the layout preview) to be attachable to other documents or emails.

To be able to print documents into PDF format you will need a PDF writer (virtual printer) installed on your computer. There are several PDF writers available do be downloaded from the Internet but the installation CD contains 'Cute-PDF writer' for you to install.

Once the program has been installed on your computer, in the layout preview select the '**Print**' function, and from the available printers chose the 'Cute-PDF writer' (as shown in figure 19 below). This operation saves the layout preview document as a PDF file rather than sending it document to the physical printer.

To attach the PDF document to your email, select the created file as an attachment. This will be added to the email, or in the case of a fax it will be sent as an additional page of the document.

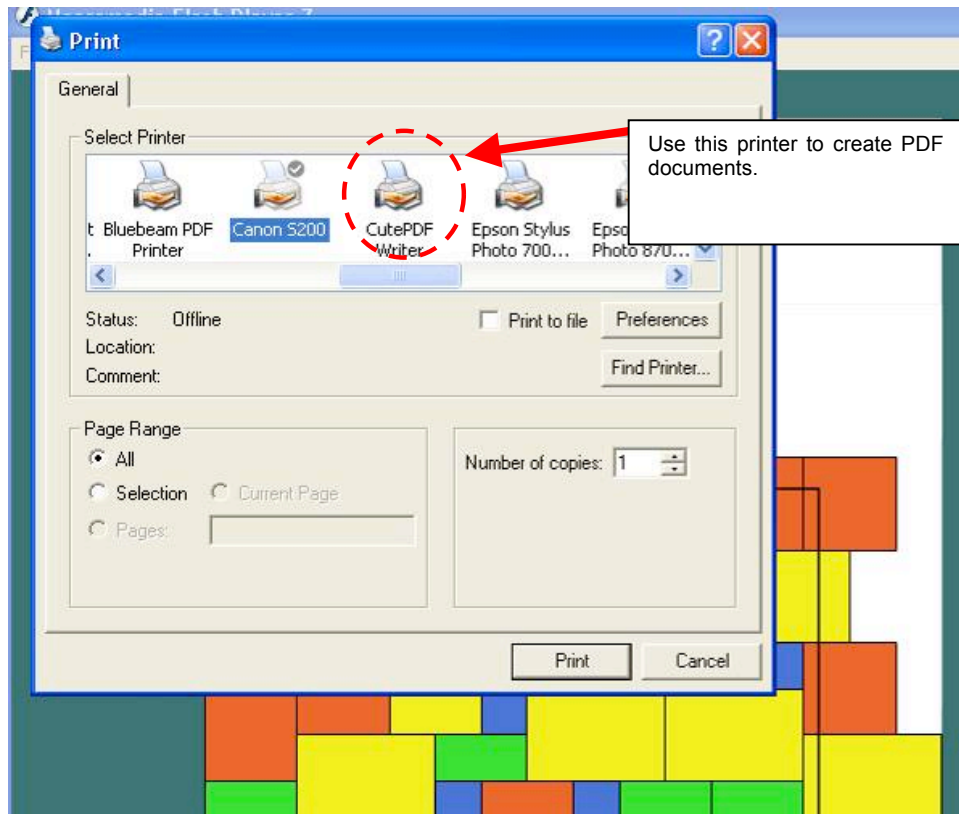


Figure 19 Selecting a PDF printer.

7.3 Saving a copy of the quotation

Most email software has a document archive function built in and all sent quotes are usually automatically stored in the sent items folder. This can be used to store created quotations for reference purposes. Alternatively an additional copy of the quotation can be saved, including all the information about the order and customer, as a text file on a local computer or server.

7.4 Fax configuration

To be able to send electronic faxes you will need an electronic fax service. There are a few online providers of electronic fax services. In the version V2 of the software 'PumaFax' has been used as the electronic service provider. This service will enable you send faxes directly from your computer via electronic post. An account with Puma Fax can be created online at www.pumaone.co.uk or by their technical service line 0870 950 1700. For the prices and technical advice on how to set up the account please refer to the service provider website.

8 Helpful hints for everyday work

This section is designed to pre-empt the problems or restrictions you may encounter during your work with the software. It is better to know about them and prepare a few solutions on how to deal with them during your work.

The software has been designed with the idea of using it online, which is why the software is very compact and very light. The programming language used to deliver this software in the smallest and lightest possible form has restricted the calculating capability of the software.

8.1 How to avoid restrictions of the program

8.1.1 Large areas

The main problem appears to be with generating a large area pattern. When an area greater than 40 x 40 metres is generated, it slows the program down noticeably. Even larger areas might take minutes to be generated and may prompt warning messages about the length of time required and slow performance of the software. There will also be a problem with printing it in PDF format.

You can continue by saying 'No' to the warning question about stopping the script or alternatively you could generate a part of the required large area instead. For example for an area of 100m x 100m, produce a fraction 10m x 10m and then multiply the results times 10. This will give a result very close to the result generated by the software for an area of 100m x 100m.

8.1.2 Producing and printing a layout for large areas

The layout preview is a helpful guide for laying slabs. When the layout preview is created for a large area a normal print out of the page will lose its functionality. If you do want to generate a large area calculation, you will have to let the program finish its calculation process and for printing purposes you can always take a screen dump, as shown in figure 20 below.



Figure 20 Layout preview of the large area.

Instead of just generating a layout preview with very small detail it will be much more helpful to also create an area that would show how to lay down the pattern. An example section of the area can be created by using a **zoom** option in the **print layout window** (right mouse click on the screen and select zoom). Then by depressing the **'Print Screen'** button on your keyboard you can create a copy of this image to paste into another file in order to print it out. The customer will still need the original detailed layout preview in order to clearly see how the pattern continues.

8.1.3 Complicated shape areas

Another issue that might appear during work with customers is that only rectangular or square shapes of the design can be generated with the software. Advanced shapes are not supported in this version of the software. This issue can be partially solved by dividing the area into a selection of smaller shapes. So, if a customer is looking for a quote for a paving area in shape of the letter L for example, this can be divided into two areas - a horizontal and a vertical strip. These areas can be calculated separately and then a combined quote can be applied. By using this method you can achieve very exact results for the amount of stones and a layout preview with minimum effort. An example is shown in the figure below.

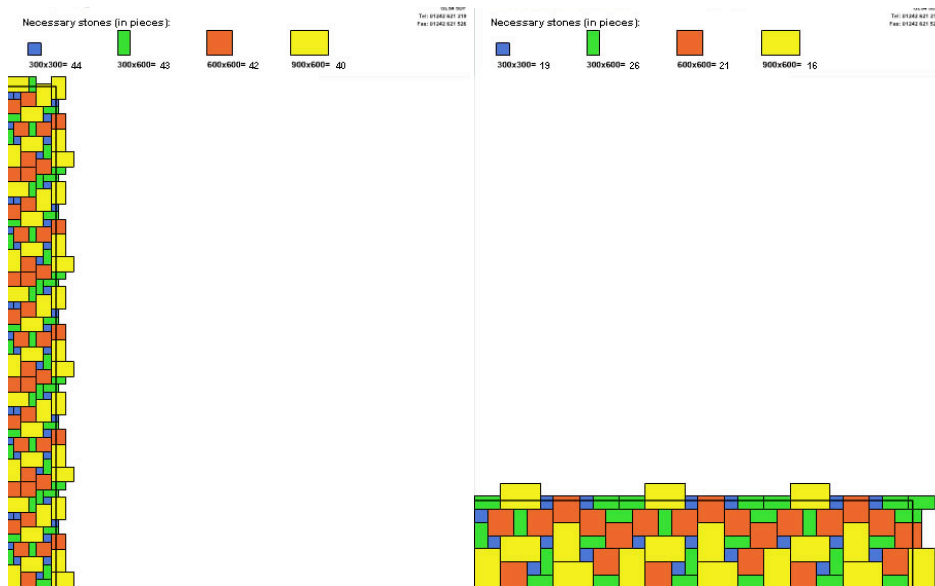


Figure 21 Layout preview of the 'L' shape area.

8.2 Good practice in everyday work

Check that the prices are up to date (actual) before you start quotations.

Keep customers' information up to date.

Keep a copy of the quotation you have produced for the customer.

Keep pattern areas under the limit.

Use name of the customer for whom you are creating a quote when creating a PDF file.

9 SDART

The Paving Calculation Software was developed by SDART Ltd.

9.1 About the authors of the software

SDART stands for 'Software Development and Research Technologies'. We are a company employing multidiscipline professionals to bring solutions helping with various aspects of the business. We specialise in software development for a broad range of applications, ranging from Engineering to Finance. SDART creates systems and tools that do not exist on the market. We are also involved in product development and creating new images for business ventures.

9.2 Contact us

If you have any enquiries about software development, please contact us on info@sdart.co.uk or visit our website:

www.SDART.co.uk